Available online at www.sciencedirect.com
SCIENCE DIRECT®
Journal of Luminescence 112 (2005) xi–xvii
ELSEVIER
JOURNAL OF LUMINESCENCE
www.elsevier.com/locate/jlumin

Contents

Conference Photograph vi

Preface vii

Conference Committees ix

Contents xi

G. Xiong, J. Wilkinson, K.B. Ucer and R.T.Williams
Giant oscillator strength of excitons in bulk and nanostructured systems. 1

K. Hazu, S. Adachi, T. Sota and S.F. Chichibu
Measurements of exciton–polariton dynamics in ZnO by using nonlinear spectroscopic techniques. 7

N. Naka and N. Nagasawa
Bosonic stimulation of cold excitons in a harmonic potential trap in Cu_2O. 11

K. Karpińska, P.H.M. van Loosdrecht, I.P. Handayani and A. Revcolevschi
Para-excitons at high densities in Cu_2O—a new approach. 17

M. Jörger, T. Fleck and C. Klingshirn
1S→ 2P terahertz transitions of the 1S paraexciton in Cu_2O. 21

G. Baldassarri Höger von Högersthal, G. Dasbach, D. Fröhlich, M. Kulka, H. Stolz and M. Bayer
Dynamic band gap shifts and magneto-absorption of Cu_2O. 25

K.P. Korona, A. Wysmolek, R. Stepniewski, J. Kuhl, D.C. Look, S.K. Lee and J.Y. Han
Dynamics of ground and excited states of bound excitons in gallium nitride. 30

S. Adachi
Polarization and wave-vector dependent measurements by four-wave mixing in ZnO: valence-band ordering and biexcitons. 34

J. Singh
Radiative recombination of excitons in amorphous semiconductors. 40

L. Charron, D. Dumchenko, E. Fortin, C. Gherman and L. Kulyuk
Radiative recombination of excitons in the transition-metal dichalcogenides MoS_2:Cl_2 and WS_2:Br_2. 45

doi:10.1016/j.jlumin.2004.09.026

K. Wakabayashi, Y. Yamaguchi, T. Sekiya and S. Kurita
Time-resolved luminescence spectra in colorless anatase TiO_2 single crystal. 50

H. Makino, T. Goto, T. Yao, G.A. Mousdis and G.C. Papavassiliou
Induced absorption and spontaneous emission due to biexciton in two-dimensional semiconductor $(CH_3C_6H_4CH_2NH_3)_2PbBr_4$ single crystal. 54

S. Kawabata and H. Nakagawa
Life-time resolved emission spectra in $CdBr_2$ crystals. 58

N.D. Nedeoglo, A.N. Avdonin, G.N. Ivanova, D.D. Nedeoglo, G.V. Kolibaba and V.P. Sirkeli
Excitonic luminescence of ZnSe single crystals doped with Au. 62

H. Kamioka, H. Hiramatsu, M. Hirano, K. Ueda, T. Kamiya and H. Hosono
Excitonic properties related to valence band levels split by spin-orbit interaction in layered oxychalcogenide LaCuOCh(Ch = S,Se). 66

F. Fujishiro and S. Mochizuki
Photoluminescence studies on AgI-ZrO_2 composites. 71

B. Tsuchiya, A. Morono, E.R. Hodgson, S. Nagata, K. Toh and T. Shikama
Electron induced luminescence of $SrCe_{0.95}Yb_{0.05}O_{3-*}$. 75

O. Kojima, K. Mizoguchi and M. Nakayama
Intense coherent longitudinal optical phonons in CuI thin films under exciton-excitation conditions. 80

A. Fujii, H. Ueda, M. Tabuki and K. Miyazaki
Extrinsic self-trapping of excitons in TlBr(I). 84

M. Watanabe and T. Hayashi
Time-resolved study of self-trapped exciton luminescence in anatase TiO_2 under two-photon excitation. 88

K. Koughia, M. Munzar, D. Tonchev, C. Haugen, R. Decorby, J.C. McMullin and S.O. Kasap
Photoluminescence in Er doped Ge-Ga-Se glasses. 92

A.N. Ogurtsov, E.V. Savchenko, S. Vielhauer and G. Zimmerer
Excitonic mechanisms of inelastic radiation-induced processes in rare-gas solids. 97

E.V. Savchenko, G.B. Gumenchuk, E.M. Yurtaeva, A.G. Belov, I.V. Khyzhniy, M. Frankowski, M. Beyer, A.M. Smith-Gicklhorn, A.N. Ponomaryov and V.E. Bondybey
Anomalous low temperature desorption from preirradiated rare gas solids. 101

P. Galiy, O. Mel'nyk and O. Tsvetkova
Excitonic ionization of the electron centres in the caesium iodide crystal and exoemission of electrons. 105

D. Bellucci, F. Troiani, G. Goldoni and E. Molinari
Magnetic-field dependent optical properties and interdot correlations in coupled quantum dots. 109

Y. Kagotani, K. Miyajima, G. Oohata, S. Saito, M. Ashida, K. Edamatsu and T. Itoh
Two-photon absorption and lasing due to biexciton in CuCl quantum dots. 113

K. Kobayashi, S. Sangu, T. Kawazoe and M. Ohtsu
Exciton dynamics and logic operations in a near-field optically coupled quantum-dot system. 117

T. Chwiej, S. Bednarek, J. Adamowski, B. Szafran and F.M. Peeters
Coulomb-interaction driven anomaly in the Stark effect for an exciton in vertically coupled quantum dots. 122

A. Kudelski, K. Kowalik, A. Golnik, G. Karczewski, J. Kossut and J. Gaj
Spatially correlated 0D exciton states in CdTe/ZnTe semiconductor system. 127

K. Tomihira, D. Kim and M. Nakayama
Optical properties of ZnS–CdS alloy quantum dots prepared by a colloidal method. 131

H. Kalt, H. Zhao, B. Dal Don, G. Schwartz, C. Bradford and K. Prior
Quasi-ballistic transport of excitons in quantum wells. 136

T. Furuichi, K. Mizoguchi, O. Kojima, K. Akahane, N. Yamamoto, N. Ohtani and M. Nakayama
Characteristics of coupled mode of excitonic quantum beat and coherent longitudinal optical phonon in GaAs/AlAs multiple quantum wells. 142

K. Nomura, T. Yamada, Y. Iguchi, S. Takagishi and M. Nakayama,
Photoluminescence properties of localized states caused by nitrogen alloying in GaInNAs/GaAs single quantum well. 146

T. Iida and H. Ishihara
Optically-induced force between nano particles irradiated by electronic resonant light. 151

M. Nakayama, K. Okuda, N. Ando and H. Nishimura
Scintillation properties of CsI:Na thin films from viewpoint of nanoparticle formation. 156

M. Itoh, T. Sakurai and J. Fu
Time-resolved luminescence study of $CaF_2:Eu^{2+}$ nanocrystals in glass-ceramics. 161

N. Galak and I. Dmitruk
Hot luminescence of CdSe nanoparticles at low temperature. 166

A. Yamamoto, S. Atsuta and Y. Kanemitsu
Fabrication and photoluminescence studies of ZnO nanocrystals dispersed in glass films. 169

H. Priller, R. Hauschild, J. Zeller, C. Klingshirn, H. Kalt, R. Kling, F. Reuss, Ch. Kirchner and A. Waag
Temperature dependent luminescence dynamics in ZnO nanorods. 173

A.M. Kapitonov, U. Woggon, D. Kayser, D. Hommel and T. Itoh
Luminescence of epitaxial sub-monolayer CdSe nanostructures in ZnSe. 177

M. Hasuo, A. Shimamoto and T. Fujimoto
Exciton luminescence spectra of CuCl films and their change by photo-irradiation. 181

C.Y. Liu, B.P. Zhang, N.T. Binh, K. Wakatsuki and Y. Segawa
Second-harmonic generation in $Mg_xZn_{1-x}O/Mg_yZn_{1-y}O$ multilayers fabricated by metalorganic chemical vapor deposition. 186

T. Shimomura, D. Kim and M. Nakayama
Optical properties of high-quality ZnO thin films grown by a sputtering method. 191

T. Hirai, Y. Harada, S. Hashimoto, T. Itoh and N. Ohno
Luminescence of excitons in mesoscopic ZnO particles. 196

K. Asano and T. Ogawa
Instability toward biexciton crystalization in one-dimensional electron-hole systems. 200

R. Shen, H. Mino, G. Karczewski, T. Wojtowicz, J. Kossut and S. Takeyama
Biexciton formation induced by bright-dark exciton transitions in a diluted magnetic semiconductor asymmetric quantum well. 204

M. Grochol, F. Grosse and R. Zimmermann
Diamagnetic shift and localization of excitons in disordered quantum wells. 208

D.V. Fil and S.I. Shevchenko
Interlayer phase coherence and superfluidity of electron–hole pairs in multilayer quantum Hall systems. 212

S. Arapan and M. Liberman
Exciton levels and optical absorption in coupled double quantum well structures. 216

Y. Tomio and T. Ogawa
Phase diagram for the exciton Mott transition in infinite-dimensional electron-hole systems. 220

V.V. Popov, T.Yu. Bagaeva, T.V. Teperik, N.J.M. Horing and Y. Ayaz
Ultrafast radiative decay of polaritons in an interface layer with strong excitonic response. 225

K. Polák and E. Mihóková
Lattice influence on the excited state relaxation. 230

M. Buron-Le Cointe, E. Collet, L. Guérin, M.H. Lemée-Cailleau, H. Cailleau, M. Wulff, T. Luty, S. Koshihara and K. Tanaka
Time-resolved X-ray diffraction: a wonderful tool for probing structural photo-induced phase transitions. 235

I. Katayama, M. Watanabe, T. Hayash and K. Tanaka
Photoexcited carrier dynamics in potassium tantalite. 242

M. Aiba, M. Nakajima, M. Isobe, Y. Ueda and T. Suemoto
Photo-induced phase transition in the 2D spin ladder compound NaV_2O_5. 246

T. Fuyuki, K. Sasaki and N. Ohno
Time-resolved photoluminescence of hydrogen-bonded ferroelectrics $PbHPO_4$. 250

Y. Takahashi, T. Matsuoka, K. Yasukawa and T. Suemoto
Excited state dynamics in quasi-one-dimensional nickel complexes studied by femtosecond luminescence spectroscopy. 255

Y. Yamada and K. Tanaka
Photo-induced suppression of ferroelectric transition in oxygen-isotope-exchanged $SrTiO_3$. 259

C. Itoh, M. Sasabe, H. Kida and K. Kan'no
Electric field-induced retardation of the drift mobility of the photocarriers in $SrTiO_3$ crystal. 263

S. Mochizuki, S. Minami and F. Fujishiro
The reversible UV-laser-induced spectral change and origin of the 2.4 eV luminescence band in $SrTiO_3$. 267

Y. Qiu and K. Nasu
Photogeneration of charged ferroelectric domains in quantum dielectric $SrTiO_3$. 271

M. Chollet, L. Guerin, N. Uchida, S. Fukaya, T. Ishikawa, S. Koshihara, K. Matsuda, H. Yamochi, A. Ota and G. Saito
Ultra fast and sensitive photo-induced phase switching in $(EDO\text{-}TTF)_2PF_6$. 275

K. Yonemitsu
Theory of photoinduced phase dynamics in organic charge-transfer complexes. 279

S. Oguri, O. Hanado, J. Takeda, M. Furuya, K. Ohno, S. Inoue and T. Kodaira
Photoinduced diamagnetic to paramagnetic phase transition in an organic radical crystal studied by microscopic IR measurements. 283

M. Ichida, I. Umezu, H. Kataura, M. Kimura, S. Suzuki, Y. Achiba and H. Ando
Temperature dependence of time-resolved luminescence spectra for 1D excitons in single-walled carbon nanotubes in micelles. 287

G.F. Farrell, G. Chambers and H.J. Byrne
Electroabsorption studies of structurally modified fullerene thin films. 291

A. Eilmes, B. Pac and P. Petelenz
Effect of the off-diagonal disorder on second-harmonic generation intensity in C_{60}. 295

E. Engel, M. Koschorreck, K. Leo and M. Hoffmann
Excitonic intraband relaxation and polarisation anisotropies in PTCDA on femtosecond and picosecond timescales. 299

R. Scholz and M. Schreiber
Microscopic models for self-trapped excitons in α-PTCDA. 303

R. Totoki, T. Aoki-Matsumoto and K. Mizuno
Density of states of the lowest exciton band and the exciton bandwidth in coronene single crystals. 308

S. Tavazzi, M. Campione, M. Laicini, A. Papagni, A. Sassella, P. Spearman and S. Trabattoni
Directional dispersion in quaterthiophene single crystals and oriented thin films. 312

M. Laicini, P. Spearman, S. Tavazzi, L. Raimondo, L. Miozzo, M. Moret and A. Borghesi
Microscopic calculation of dielectric tensor for quaterthiophene crystals. 316

F. Quochi, A. Andreev, F. Cordella, R. Orrù, A. Mura, G. Bongiovanni, H. Hoppe, H. Sitter and N.S. Sariciftci
Low-threshold blue lasing in epitaxially grown para-sexiphenyl nanofibers. 321

S. Kobayashi, F. Sasaki, H. Yanagi, S. Hotta, M. Ichikawa and Y. Taniguchi
Spectrally narrowed emission in 2,5-bis(4-biphenylyl)thiophene crystals pumped by fs laser pulse. 325

J. Inoue
Application of photonic crystals to study molecular systems. 329

D. Kotowski, B. Kutrzeba-Kotowska, R. Signerski and J. Godlewski
Excitonic stimulation of current flowing along thin tetracene layers. 333

M. Obarowska, R. Signerski and J. Godlewski
Excitons dissociation on pentacene–metal surface. 337

I. Akimoto, K. Kan'no, H. Osuga and K. Tanaka
Photo-Luminescence properties and exciton-carrier interaction in 1,2-diarylethylene derivatives films. 341

J.-P. Galaup
Spectrally selective molecular doped solids: spectroscopy, photophysics and their application to ultrafast optical pulse processing. 345

O. Mirzov, F. Cichos, C. von Borczyskowski and I. Scheblykin
Fluorescence blinking in MEH-PPV single molecules at low temperature. 353

S. Stafström
Dynamical simulation of exciton dissociation in poly (para-phenylenevinylene) systems. 357

M. Weiter and H. Bässler
Transient photoconductivity and charge generation in thin films of π-conjugated polymers. 363

I.V. Tolstov, A.V. Belov, M.G. Kaplunov, I.K. Yakuschenko, N.G. Spitsina, M.M. Triebel and E.L. Frankevich
On the role of magnetic field spin effect in photoconductivity of composite films of MEH-PPV and nanosized particles of PbS. 368

H. Detert and E. Sugiono
Bis(pyridylvinyl)diaminobenzenes: Synthesis, acidochromism and solvatochromism of the fluorescence. 372

S.A. Bagnich, H. Bässler and D. Neher
Exciton dynamics in ladder-type methyl-poly(para-phenylene) doped with phosphorescent dyes. 377

N. Ostapenko, N. Kotova, V. Lukashenko, G. Telbiz, V. Gerda, S. Suto and A. Watanabe
Size effect in optical spectra of nanostructured polysilanes. 381

P. Toman, S. Nešpůrek, W. Bartkowiak and J. Sworakowski
Excitations in oligosilanes with photochromic side groups. 386

T. Kobayashi, K. Nishimura, F.S. Rondonuwu and Y. Koyama
Excited-state dynamics of the $1B_u$, $3A_g$, $1B_u$ and $2A_g$ states in a carotenoid molecule by 5-fs absorption spectroscopy. 391

F. Spano
Temperature dependent emission in disordered herringbone aggregates: stacking faults and point defects. 395

M. Cerminara, F. Meinardi, A. Sassella and R. Tubino
Coherent excitonic emission in molecular semiconductors. 402

J.-P. Lemaistre
Disorder, intraband relaxation and dephasing of Frenkel excitons in molecular aggregates. 407

M. Bednarz, V.A. Malyshev and J. Knoester
Low-temperature spectral dynamics of excitons in molecular aggregates. 411

K. Miyasue, T. Honma, S. Kurita, T. Sekiya, M. Nakajima and T. Suemoto
Up-converted luminescence on cyanine dye J-aggregates. 416

G. Trinkunas and A. Freiberg
Abrupt exciton self-trapping in finite and disordered one-dimensional aggregates. 420

Yu.V. Malyukin, A.N. Lebedenko, A.V. Sorokin and S.L. Yefimova
Co-existence of free and self-trapped excitons in J-aggregates. 424

Yu.V. Malyukin, A.N. Sorokin, S.L. Yefimova and A.N. Lebedenko
Photo-induced reorganization of molecular packing of amphi-pic J-aggregates (single J-aggregate spectroscopy). 429

A. Czuper, J. Kuśba and J.R. Lakowicz
Site-to-site distance distribution in flexible molecules: Theoretical evaluation of the donor and/or acceptor fluorescence decay function. 434

Yu.V. Malyukin, S.L. Yefimova, A.N. Lebedenko, A.N. Sorokin and I.A. Borovoy
Nano-scale control of energy transfer in the system "donor–acceptor". 439

W. Holzer, A. Penzkofer and P. Hegemann
Photopysical and photochemical excitation and relaxation dynamics of LOV2 domains of Phot from *Chlamydomonas reinhardtii.* 444

I. Akai, H. Nakao, K. Kanemoto, T. Karasawa, H. Hashimoto and M. Kimura
Rapid energy transfer in light-harvesting small dendrimers. 449

R. Hauschild, G. Riedel, J. Zeller, T.S. Balaban, V.I. Prokhorenko, H. Kalt, N. Berova, X. Huang, R. Pescitelli and K. Nakanishi
Comparative study of energy-transfer processes in several porphyrin-based artificial light-harvesting molecules. 454

M. Menšík, S. Nešpůrek and K. Král
Resonance effects in the excited state decay. 458

U. Kleinekathőfer, M. Schrőder and M. Schreiber
Absorption spectra for a model light-harvesting system using non-Markovian theories. 461

H. Ishihara, H. Mifune and T. Nakatani
Linear and nonlinear optical response of spiral-type excitons. 465

P. Heřman, I. Barvik and M. Reiter
The anisotropy of fluorescence in ring units. 469

F. Terenziani and A. Painelli
Collective and cooperative phenomena in molecular materials: dimmers of polar chromophores. 474

List of Contributors 479

Subject Index 483

Material Index 487